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## Original Article

# Translation and cultural adaptation of the Hip Outcome Score to the Portuguese language<sup>☆,☆☆</sup>

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## ABSTRACT

**Objective:** to translate the Hip Outcome Score clinical evaluation questionnaire into Portuguese and culturally adapt it for Brazil.

**Methods:** the Hip Outcome Score questionnaire was translated into Portuguese following the methodology consisting of the steps of translation, back-translation, pretesting and final translation.

**Results:** the pretesting was applied to 30 patients with hip pain without arthrosis. In the domain relating to activities of daily living, there were no difficulties in comprehending the translated questionnaire. In presenting the final translation of the questionnaire, all the questions were understood by more than 85% of the individuals.

**Conclusion:** the Hip Outcome Score questionnaire was translated and adapted to the Portuguese language and can be used in clinical evaluation on the hip. Additional studies are underway with the objective of evaluating the reproducibility and validity of the Brazilian translation.

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## Tradução e adaptação cultural do Hip Outcome Score para a língua portuguesa

## RESUMO

**Objetivo:** traduzir para o português e adaptar culturalmente para o Brasil o questionário de avaliação clínica Hip Outcome Score (HOS).

**Métodos:** o questionário HOS foi traduzido para o português com metodologia constituída pelas etapas de tradução, retrotradução, pré-teste e tradução final.

## Palavras-chave:

Quadril

Tradução

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**Resultados:** o pré-teste foi aplicado a 30 pacientes com dor no quadril sem artrose. No domínio relacionado a atividades de vida diária, não houve dificuldades de compreensão do questionário traduzido. Na apresentação da tradução final do questionário, todas as questões foram compreendidas por mais de 85% dos pacientes.

**Conclusão:** o questionário HOP foi traduzido e adaptado culturalmente para a língua portuguesa e pode ser usado na avaliação clínica do quadril. Estudos adicionais estão em andamento com o objetivo de avaliar a reprodutibilidade e validade da tradução brasileira.

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## Introduction

Quality-of-life evaluations are increasingly used within the field of healthcare, especially since it was proven that

quality-of-life measurement properties are valid and reproducible parameters.<sup>1,2</sup> Measurements of quality of life and state of health have been emphasized by the orthopedic community.<sup>3-5</sup> Measurement of the impact of diseases on quality of life has become increasingly important for providing

**Table 1 – Pretest applied to 30 patients.**

Questions on activities of daily living	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	Not applicable	Not answered	Total
Standing for 15 min	10	11	6	2	1	0	0	30
Getting into and out of a car	4	12	7	7	0	0	0	30
Putting on socks and shoes	9	9	6	6	0	0	0	30
Going up steep slopes	6	12	3	8	0	1	0	30
Going down steep slopes	9	9	11	1	0	0	0	30
Going up a flight of stairs	9	10	1	10	0	0	0	30
Going down a flight of stairs	12	8	9	1	0	0	0	30
Stepping onto and off curbs	17	3	8	0	0	2	0	30
“Exaggerated” squatting	0	7	11	9	3	0	0	30
Getting into and out of a bath tub	11	5	1	4	0	9	0	30
Sitting for 15 min	18	6	3	2	0	1	0	30
Starting to walk	16	7	5	2	0	0	0	30
Walking for approximately 10 min	18	6	4	2	0	0	0	30
Walking for 15 min or more	6	14	7	3	0	0	0	30
Twisting/turning of the affected leg	1	9	12	8	0	0	0	30
Turning over in bed	6	10	11	3	0	0	0	30
Light to moderate work (standing and walking)	14	9	6	1	0	0	0	30
Heavy work (pushing/pulling, climbing, carrying)	3	3	15	5	1	3	0	30
Recreational activities	6	6	12	4	0	2	0	30
	175	156	138	78	5	18	0	570
	30.7%	27.4%	24.2%	13.7%	0.9%	3.2%	0.0%	100.0%
Questions on sports	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	Not applicable	Not answered	Total
Running 1.5 km	2	7	8	3	9	1	0	30
Jumping	2	12	5	6	3	2	0	30
Swinging objects, like a golf club	7	6	6	6	0	5	0	30
Landing on the ground after a jump	3	9	4	3	5	6	0	30
Starting and stopping rapidly	6	11	5	3	4	1	0	30
Abrupt change of direction/lateral movement	0	12	9	8	0	1	0	30
Low-impact activities such as walking rapidly	8	8	9	3	2	0	0	30
Capacity to do activities with your normal technique	8	12	3	2	4	1	0	30
Capacity to participate in a desired sport for as long as you would like	0	6	8	8	6	2	0	30
	36	83	57	42	33	19	0	270
	13.3%	30.7%	21.1%	15.6%	12.2%	7.0%	0.0%	100.0%

so-called ceiling effect, i.e. a large proportion of the individuals evaluated reach the maximum score, which is erroneously interpreted as a satisfactory result.<sup>11</sup>

Hip pain in young and physically active individuals has received special attention since the importance of labral lesions as one of the factors involved in the origin of degenerative hip joint disease was recognized.<sup>12,13</sup> In 2005, Martin described the Hip Outcome Score (HOS),<sup>14</sup> a hip assessment questionnaire that was created with the aim of analyzing the results from therapeutic interventions in individuals with acetabular labral tears and high functional demands.<sup>15</sup> This questionnaire is considered to be valid for measuring function among individuals undergoing hip arthroscopy who present acetabular labral tears.<sup>16,17</sup>

With few exceptions, these questionnaires were developed in English-speaking countries, which makes it more

[illegible]

Table 2 (Continued)

Light to moderate work (standing, walking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heavy work (push/pulling, climbing, carrying)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreational activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How would you rate your current level of function during your usual activities of daily living from 0 to 100 with 100 being your level of function prior to your hip problem and 0 being the inability to perform any of your usual daily activities?						
<input type="text"/>						
<input type="text"/> .0%						
Hip Outcome Score (HOS)						
Sports Scale						
Because of your hip how much difficulty do you have with:						
	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
Running one mile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jumping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swinging objects like a golf club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Starting and stopping quickly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cutting/lateral movements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low impact activities like fast walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to perform activity with your normal technique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to participate in your desired sport as long as you would like	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How would you rate your current level of function during your sports related activities from 0 to 100 with 100 being your level of function prior to your hip problem and 0 being the inability to perform any of your usual daily activities?						
<input type="text"/>						
<input type="text"/> .0 %						
How would you rate your current level of function?						
<input type="checkbox"/> Normal	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Nearly normal	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Abnormal	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Severely abnormal	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

difficult to use them in countries where the language is not English. Moreover, between countries that speak the same language, their individual and culturally distinct characteristics give rise to the need for assessment instruments to undergo adaptations to make them appropriate for the cultural context of the target population.<sup>18</sup> The present study had the aim of translating and culturally adapting the HOS

quality-of-life questionnaire to the Portuguese language of Brazil.

## Methods

This study was approved by the Research Ethics Committee of the Pedro Ernesto University Hospital of the State University

During the review process on the translations, the semantic, idiomatic, experience/cultural and conceptual

For the pretesting stage, 30 consecutive patients with complaints of hip pain but without coxarthrosis were selected from the hip outpatient clinic of the Orthopedic Institute of Tijuca. Patients were excluded if they presented with the following: (i) visual or cognitive disorders that impeded reading

[illegible]

Table 3 (Continued)

Sentar por 15 minutos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Início da caminhada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andar por aproximadamente 10 minutos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andar por 15 minutos ou mais	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Por causa do seu quadril, quanta dificuldade você tem para:						
	Sem dificuldade	Pequena dificuldade	Moderada dificuldade	Extrema dificuldade	Não consegue fazer	N/A
Girar/virar sobre a perna acometida	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Virar-se na cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trabalho leve a moderado (ficar de pé e andar)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trabalho pesado (empurrar/puxar/escalar/carregar)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Atividades recreativas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Como você quantificaria seu nível funcional durante as atividades usuais da vida diária de 0 a 100, com 100 sendo seu nível de função antes do seu problema de quadril e 0 sendo a impossibilidade de fazer quaisquer atividades usuais da vida diária?						
<input type="text"/>						
<input type="text"/> %						
Escore de resultados do quadril						
Escala de esportes						
Por causa do seu quadril, quanta dificuldade você tem para:						
	Sem dificuldade	Pequena dificuldade	Moderada dificuldade	Extrema dificuldade	Não consegue fazer	N/A
Correr 1,5 km	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pular	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balançar objetos, como numa tacada de golfe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aterrisar no solo após salto	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Iniciar e parar rapidamente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mudança brusca de direção/movimentos laterais	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Atividades de baixo impacto, como andar rapidamente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Capacidade de fazer atividades com sua técnica normal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Capacidade de participar do seu esporte desejado durante o tempo que você gostaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Como você quantificaria seu nível funcional durante as atividades esportivas, variando de 0 a 100, sendo 100 o nível de função nessas atividades antes do problema de quadril e 0 a impossibilidade de fazer quaisquer atividades usuais da vida diária?						
<input type="text"/>						
<input type="text"/> %						
Como você quantifica seu nível funcional atual?						
<input type="checkbox"/> Normal						
<input type="checkbox"/> Quase normal						
<input type="checkbox"/> Anormal						
<input type="checkbox"/> Muito normal						

and interpretation of the questionnaire; (ii) coxarthrosis, characterized by a minimum joint space of less than 1.5 mm<sup>21</sup> and by severe limitation of hip range of motion.<sup>14</sup> The CT was applied to these 30 patients. The questions that were not understood by at least 85% of the patients were modified to the extent that was necessary and were then presented again to all the patients, until good understanding was achieved. After elimination of all situations that did not form part of the patients' day-to-day lives, and questions or terms that were not well understood, the CT was considered to be the final translation of the questionnaire (FT).

## Results

In the pretesting, the CT was applied to 30 individuals in order to assess comprehension and semantic, idiomatic, cultural and conceptual equivalences.

With regard to semantic equivalence, verbs used in the present continuous tense in the HOS questionnaire were translated into Portuguese in the infinitive. The only word in the original questionnaire that did not have an exact translation into the Portuguese language was one in the title of the questionnaire. Thus, within the context, the word "outcome" was translated as "resultado" (result).

Regarding idiomatic equivalence, the HOS questionnaire did not present any idiomatic expressions that necessitated adaptations to Portuguese.

Regarding cultural equivalence, only one item, on the ADL scale, was slightly modified for greater coherence with the cultural context of the Brazilian population. Item 2 of the original questionnaire speaks of "getting into and out of an average car", and this was translated as "entrar e sair do carro" (getting into and out of a car), which is sufficient to transmit the idea of a small to medium-sized car, which accounts for the absolute majority of cars in Brazil.

Regarding conceptual equivalence, when the activities of the original questionnaire were translated into Portuguese, they did not present any need for conceptual adaptations.

All the individuals answered all of the questions in the pretest and all of the questions were understood by more than 85% of the interviewees (Table 1). Thus, the CT did not need to be modified and it became the FT (HOS-Brazil).

Table 2 presents the original HOS questionnaire and Table 3 presents HOS-Brazil, after translation and cultural adaptation.

## Discussion

In evaluating the semantic equivalence, the original HOS questionnaire was seen to use the present continuous verb tense, which in the Portuguese language may lead to "gerundismo", i.e., improper use of the gerund. Thus, words like standing, walking, sitting and running were translated as the infinitives of these verbs (stand, walk, sit and run), which in Portuguese are used to indicate the action without situating it in time. Also in relation to semantic equivalence, in translating the term "deep squatting" in item 9 of the activities of daily living, it was decided to translate the adjective as "exagerado" (exaggerated or overdone), which is used in Portuguese to denote a connotation of greater intensity

and would be more easily understood by the interviewees, such that the term was translated in the HOS-Brazil as "agachamento exagerado". Recent published articles on translations of questionnaires used in orthopedics have followed the same strategy.<sup>10,22</sup>

Among the limitations of this study, we did not evaluate the schooling levels of the individuals who answered the questionnaire. This factor could have led to difficulty in understanding the questions, given that the patients were at a public healthcare service in a developing country (social). Likewise, the level of physical activity could have interfered with the understanding of sports movements ("landing on the ground after a jump" or "swinging objects, like a golf club"). All the questionnaires were applied at a single center that perhaps did not completely correspond to the realities of the Brazilian population.

Despite the growing interest in clinical studies on non-degenerative diseases of the hip, many obstacles have been encountered within the Brazilian setting with regard to making assessments of greater precision on the results from such studies. This particularly so in relation to observational studies on new therapeutic interventions such as arthroscopy, and this has resulted in stimulating translations and cultural adaptations of specific evaluation instruments.<sup>8,10</sup> The absence of a specific instrument destined for evaluating individuals with non-degenerative hip diseases who practice sports that is validated in Portuguese makes it difficult to understand the various factors that make up the problem.<sup>2,10</sup>

The HOS was created with the objective of evaluating the results from therapeutic interventions among individuals with high functional demands who present acetabular labral tears.<sup>16,17</sup> Since the HOS is a specific questionnaire for hip conditions in active individuals that has already been validated and tested in populations that use the English language, our hypothesis is that its translation and validation for the Portuguese language of Brazil will be viable and acceptable for the realities of this country. Because of the growing numbers of hip arthroscopy procedures performed in Brazil, it is necessary to use an instrument that has been translated and culturally adapted for Brazilian Portuguese and which evaluates the quality of life in this specific group of patients, so as to have better knowledge of the state of the disease and better assessment of the results from interventions that are implemented.

## Conclusion

The Hip Outcome Score questionnaire was translated and culturally adapted to the Portuguese language of Brazil and can be used for clinical evaluations on the hip. Additional studies are underway with the aim of evaluating the reproducibility and validity of the Brazilian translation.

## Conflicts of interest

The authors declare no conflicts of interest.



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